



Soil Education Course Additional Resources & Readings

All Chapters – Resources

Natural Disaster Relief/Recovery Assistance and Information

“Post-Fire Disaster Assistance.” Fire Recovery Assistance from the U.S. Department of Agriculture | NRCS California, 4 Nov. 2019,

<https://www.nrcs.usda.gov/conservation-basics/conservation-by-state/california/post-fire-disaster-assistance>

“Resources for Farmers Affected by the Midwest Floods.” Farm Aid, 9 June 2020,

www.farmaid.org/blog/resources-for-farmers-affected-by-the-midwest-floods/

“Top Five Tips to Help Farmers Prepare for a Natural Disaster.” AgAmerica, 26 Aug. 2019,

<https://agamerica.com/blog/tips-to-prepare-farm-for-natural-disaster/>

Scientific Research Journals and Studies

Williams, Joshua E., and Stanley V. Gregory. “Fish Occurrence in a Seasonally Inundated Floodplain of the Willamette River, Oregon.” Northwest Science, Northwest Scientific Association, 2018,

<https://bioone.org/journals/northwest-science/volume-92/issue-3/046.092.0306/Fish-Occurrence-in-a-Seasonally-Inundated-Floodplain-of-the-Willamette/10.3955/046.092.0306.short>

“Oregon Farmers Surprised to Find Fish in Fields.” PBS, Public Broadcasting Service, 8 Mar. 2012,

www.pbs.org/newshour/show/oregon-farmers-surprised-to-find-fish-in-fields

Smith, Ford. “Balancing Biology to Avoid Promoting Weeds.” Regenerative Land Solutions, Home, 8 Aug. 2020,

<https://www.regenerativelandsolutions.com/case-studies>

Penn State. “Cover crop roots are an essential key to understanding ecosystem services.” ScienceDaily. ScienceDaily, 13 August 2020.

Composting

Recommended Compost Thermometer. <https://reotemp.com/compost/>

US Composting Consult Council.

They offer organic growing parameters. This is typically for large-scale regulations, and may not be necessarily useful for smaller, backyard operations.

“Get Certified as a Compost Professional.” US Composting Council, 2020, www.compostingcouncil.org/.

Basic, simple backyard composting tips.

This site includes Carbon to nitrogen ratios, general tips and definitions, and good practice ideas.

“Composting 101: All About Composting for Beginners.” Gardening Channel, 27 May 2020, www.gardeningchannel.com/composting-101/.

Compost Wikipedia Page, great for general education.

“Compost.” Wikipedia, Wikimedia Foundation, 26 Aug. 2020, <https://en.wikipedia.org/wiki/Compost>

Testing

BiomeMakers Genomic Research in Spain

“Functional Soil Analysis.” Biome Makers, 26 Aug. 2020, www.biomemakers.com/.

Microbiometer Testing Website

Fitzpatrick, Judith. “Performing The MicroBIOMETER® Soil Test.” Welcome to MicroBIOMETER®, 2020, www.microbiometer.com/.

Protozoa

Short Videos used in the Protozoa Presentation:

Porter, Bill. “Stentor Eats Arcella.” Youtube, 14 Apr. 2016, www.youtube.com/watch?v=Z65rBu2nesg.

Moore, Nick. “Vorticella - Under the Microscope.” Youtube, 7 Sept. 2016, <https://www.youtube.com/watch?v=VOH2qOFoLto>

Short article on what Protozoa is & all of its functions in the soil.

“Protozoa: What Is Microbiology?” What Is Microbiology? | Microbiology Society, 2020,

<https://microbiologysociety.org/why-microbiology-matters/what-is-microbiology.html#:~:text=Microorganisms%20matter%20because%20they%20affect,collectively%20known%20as%20'microbes'>.

Fungi

Calcium-Storing Fungi Research.

Cromack, Kermit, et al. "Calcium Oxalate Accumulation and Soil Weathering in Mats of the Hypogeous Fungus *Hysterangium Crassum*." *Soil Biology and Biochemistry*, Pergamon, 12 Nov. 2002, www.sciencedirect.com/science/article/abs/pii/0038071779900038.

New York Botanical Garden

[Plant Research and Conservation](#)

Quick read on Mycorrhizal Fungi

"Why and How to Improve Grass Roots with Mycorrhizal Fungi." Pennington Seed, Inc., 2019, <https://www.pennington.com/all-products/grass-seed/resources/mycorrhizal-fungi-creates-healthy-lawns>

A quick read on Fungi and its Importance in Soil Microbiology.

"Fungi: What Is Microbiology?" *What Is Microbiology?* | Microbiology Society, 2020, <https://microbiologysociety.org/why-microbiology-matters/what-is-microbiology/fungi.html>

General Mold Information

"Is It Safe to Eat That Moldy Bread?" *Imagination Station Studio*, 2020, <https://de.scienceaq.com/andere/1006022628.html>

A quick read on symbiotic and mutualistic relationships:

"Fungi Symbiosis." *CK-12 Biology For High School*, 2020, <https://flexbooks.ck12.org/cbook/ck-12-biology-flexbook-2.0/section/8.14/primary/lesson/symbiotic-relationships-of-fungi-bio/>

Other Mentioned & Interesting Resources

Humic Acid Article (Mentioned in Compost Tea & Extracts Session: Week #19)

Alexander, Ron. "Compost And Humic Substances." *BioCycle*, 9 Sept. 2020, www.biocycle.net/compost-and-humic-substances/.

Video "Dirt Simple Brewer." Youtube, Earthfort, LLC. 7 February 2018,

https://youtu.be/9Ee_me4C_p4.

Beneficial Insectary Inc., 3 Oct. 2017, www.insectary.com/.

We worked directly with the OSU Radiation Center during our Fukushima project.

"OSU Radiation Center." *Radiation Center | Oregon State University*, 2020, <https://radiationcenter.oregonstate.edu/>

Video “SNOTTITES, SNOTICLES in Welsh Mine U.K.”

Youtube, Underground Explorers C9C, 9 June 2019,
www.youtube.com/watch?v=UmDWkDoORr0.

Bacteria: NASA Mars Rover Clean Room Article

“Planetary Protection Technologies.” NASA, NASA, 2020,
<https://planetaryprotection.jpl.nasa.gov/technology-development>

Fertilizer Research and Data Resource

Roser, Max, and Hannah Ritchie. “Fertilizers.” Our World in Data, 26 Oct. 2013,
<https://ourworldindata.org/fertilizers>

Interactive Soil Degradation Map

Where you can toggle individual map pieces and layers, specifically in your area of the world. “Global Soil Degradation Severity: Maps: Data Basin.” Global Soil Degradation Severity | Maps | Data Basin, 2020,
<https://databasin.org/maps/58940a97a23341db8233844a2be14319/>

Recommended Short Article on Education and the Social Distancing of Agriculture written by Ray Archuleta from Understanding Ag, LLC

Richburg, Kathy, and Ray Archuleta. “Education and the ‘Social Distancing’ of Agriculture.” Understanding Ag, LLC, 2020,
<https://understandingag.com/education-and-the-social-distancing-of-agriculture/>

Regenerative Land Solutions Website

Smith, Ford. “Agriculture.” Regenerative Land Solutions, Regenerative Land Solutions, 2020, <https://www.regenerativelandsolutions.com/suggested-reading>

Humic Acid Information, Research, and Opinions “What Are Humic Substances?”

Natural Organic Matter Research, IHSS, 2019,
www.humic-substances.org/.

Biochar Information/definition.

<https://en.wikipedia.org/wiki/Biochar>

Woodland Park Zoo Site

<https://www.zoo.org/>

Recommended Reading

Dirt: The Erosion of Civilizations [Buy it here on Amazon](#)

Soil Science for Gardeners: Working with Nature to Build Soil Health

(Mother Earth News Wiser Living Series) [Buy it here on Amazon](#)

Worms Ate My Garbage

Appelhof, Mary, and Joanne Olszewski. Worms Eat My Garbage: How to Set up and Maintain a Worm Composting System. Storey, 2018. [Buy it here on Amazon](#)

Vermiculture Technology: Earthworms, Organic Wastes, and Environmental Management

Edwards, Clive Arthur. Vermiculture Technology: Earthworms, Organic Wastes, and Environmental Management. CRC Press, 2011. [Buy it here on Amazon](#)

The Secret Life of Compost - Malcolm Beck

Beck, Malcolm, and Charles Walters. The Secret Life of Compost: a Guide to Static-Pile Composting -- Lawn, Garden, Feedlot or Farm. Acres U.S.A., 2008. [Buy it here on Amazon](#)

A Soil Owner's Manual by Jon Stika

Stika, Jon. A Soil Owner's Manual: How to Restore and Maintain Soil Health. Jon Stika, 2016. [Buy it here on Amazon](#)

Soil Microbiology, Ecology, and Biochemistry Edited by Eldor Paul.

A scientific journal based textbook, great for referencing as you work on your soil projects. (The "Bible" for our education course.)

PAUL, ELDOR A. Soil Microbiology, Ecology and Biochemistry. ELSEVIER ACADEMIC Press, 2017.

The Nature and Properties of Soils (15th Edition) by Ray Weil, Nyle Brady

Brady, Nyle C., and Ray R. Weil. The Nature and Properties of Soils. Pearson, 2017 [Buy it here on Amazon](#)

Nematodes of the Netherlands by Tom Bongers.

Hardcover textbook, mostly used for reference and identification of nematodes. We use this book in our

lab at Earthfort! Bongers, Tom. De Nematoden Van Nederland: Een Identificatietabel Voor De in Nederland Aangetroffen Zoetwater- En Bodembewonende Nematoden. Stichting Uitg. KNNV, 1994. [Buy it here on Amazon](#)

Illustrated Guide to the Protozoa. Society of Protozoologists.

Edited by John J. Lee, Seymour H Hutner, Eugene C. Bovee. Hardcover textbook, mostly used for reference. Lee, John J., et al. An Illustrated Guide to the Protozoa. Society of Protozoologists, 1985. [Buy it here on Amazon](#)

How to Know the Protozoa

(The Pictured Key Nature Series) 2nd Edition by Theodore Louis Jahn (Author), Eugene Cleveland Bovee (Author), Frances Floed Jahn (Author). \$59 option -- good short reference book, that is spiral bound!

Jahn, Theodore Louis, and Frances Floed. Jahn. How to Know the Protozoa: a Pictured-Key for Identifying the More Common Fresh Water, Marine, and Parasitic Protozoa, with Elementary Discussions of the Importance of Each Group and of Interesting Facts Concerning Them. W.C. Brown, 1976. [Buy it here on Amazon](#)

Mycorrhizal Functioning: An Integrative Plant-Fungal Process.

Allen, Michael F. Mycorrhizal Functioning: an Integrative Plant-Fungal Process. Chapman and Hall, 1992. [Buy it here on Amazon](#)

Mycorrhiza Manual A. Varma Edition, Springer Lab Manual

Varma, Ajit. Mycorrhiza Manual. Springer, 1998. [Buy it here on Amazon](#)

Introduction to Fungi, 2nd Edition, John Webster

Webster, John, and Roland Weber. Introduction to Fungi. Cambridge University Press, 2007. [Buy it on Amazon](#)

Metal Ions in Fungi by Wikeminn & Winge.

A great reference textbook.

Winkelmann Günther, and Dennis R. Winge. Metal Ions in Fungi. Marcel Dekker, 1994. [Buy it on Amazon](#)

Microbiology in Action

Heritage, J., et al. Microbiology in Action. Cambridge Univ. Press, 2000.

[Buy it on Amazon](#)

Biology of the Prokaryotes. Recommended as a Reference Textbook.

Lengeler, Joseph W. Biology of the Prokaryotes 150 Tables. Thieme, 1999.

[Buy it on Amazon](#)

Thinking Like A Plant by Craig Holdridge.

When we slow down, turn our attention to plants, study them carefully, and consciously internalize the way they live, a transformation begins. Our thinking becomes more fluid and dynamic; we realize how we are embedded in the world; we become sensitive and responsive to the contexts we meet; and we learn to thrive within a changing world. These are the qualities our culture needs in order to develop a more sustainable, life-supporting relation to our environment.

Holdrege, Craig. Thinking Like a Plant: a Living Science for Life. Lindisfarne Books, 2013. [Buy it on Amazon](#)

Edible Forest Gardens, Volumes 1+2 by Dave Jacke and Eric Toensmeier.

A more “hardcover textbook” resource, full of detailed information that spells out and explores the key concepts of forest ecology and applies them to the needs of natural gardeners in temperate climates.

Jacke, Dave, and Eric Toensmeier. Edible Forest Gardens. Vol. 1, 2, Chelsea Green, 2008. [Buy it on Amazon](#)

Ecology: Concepts and Applications 8th Edition by Manuel Molles

Molles, Manuel C., and Anna Sher. Ecology: Concepts and Applications. 8th ed., McGraw-Hill Education, 2019. [Buy it on Amazon](#)

The Nature and Properties of Soils (15th Edition) by Ray Weil, Nyle Brady

Weil, Ray R., and Nyle C. Brady. The Nature and Properties of Soils. 15th ed., Pearson, 2017. [Buy it on Amazon](#)

Elements of the Nature and Properties of Soils (3rd Edition) by Nyle Brady, Ray Weil

Brady, Nyle C., and Ray R. Weil. Elements of the Nature and Properties of Soils. 3rd ed., Pearson, 2019. [Buy it on Amazon](#)

Weeds of the West by Tom D. Whitson.

Weeds of the West is the foremost guide to identifying weeds in Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington and Wyoming. This guide contains over 900 color photographs showing the early growth stages, mature plants and features for positive identification of each weed. This newly revised edition is expanded with 300 new photos.

Whitson, Tom D. Weeds of the West. Western Society of Weed Science in Cooperation with the Western United States Land Grant Universities Cooperative Extension Services and the University of Wyoming, 2012. [Buy it on Amazon](#)

Life in the Soil, by James B. Nardi.

Great Illustrations of insects, animals, and microbiology by the author. Knowledge is offered from a different perspective, as it is written with a more naturalistic approach, making it an easier read.

Nardi, James B. Life in the Soil: A Guide for Naturalists and Gardeners. Univ. of Chicago Press, 2007. [Buy it on Amazon](#)

Soil Biology Primer, published by the USDA and is easily accessible.

It outlines soil science concepts in a very succinct way.

Ingham, Elaine, et al. Soil Biology Primer. Soil and Water Conservation Society, in Cooperation with the USDA Natural Resources Conservation Service, 2000.

[Buy it here / more info](#)

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